

A POSTAL INFORMATION INPUT APPARATUS AND A DATA DISPLAY METHOD  
THEREOF

BACKGROUND OF THE INVENTION

5 Field of the Invention

The present invention relates to an information input apparatus for a postal matter sorting machine and a data display method thereof, and in particular, relates to an information input apparatus that enables letting an operator  
10 recognize the processing speed necessary for on-line processing of the postal matter sorting machine, and a data display method thereof.

Description of the Related Art

A postal information input apparatus of a conventional  
15 postal matter sorting machine is constructed such that when the postcode is not read normally by the OCR, the correct postcode is reentered manually, thereby enable again sorting of a mail.

In such a conventional system, several images are  
20 received ahead, so as to perform preparation such as screen creation or the like for preparing next key stroke, in order to improve the processing speed.

In the on-line processing system, however, when the image that has received ahead becomes time out, that is, if  
25 input has not been finished within a predetermined time, the data struck by keys is discarded without being used. As a result, the data must be re-entered.

In view of the above-described situation, an efficient key striking method has been desired for reducing occurrence

of time out. With the above-described conventional method, however, there are problems as described below.

A first problem is that a key striker cannot recognize the occurrence of time out, and as a result, the key striker cannot recognize properly his/her own key striking speed. That is because a mechanism for informing the key striker that time out has occurred is not provided.

A second problem is that the key striker cannot recognize the number of mails that have been received and held. That is because a mechanism for informing the key striker of the number of mails that have been received and held is not provided.

In any case, the problem is, in general, that information to the key striker is little, and by recognizing the occurred situation, the current situation has to be understood from the behind.

In the Japanese Patent (KOKOKU) No. 62-6870, a postcode input apparatus for a postal matter sorting machine is disclosed. This apparatus, however, does not solve above-noted problem.

#### SUMMARY OF THE INVENTION

The object of the present invention is to improve the disadvantage in the above-described related art, and in particular, in the input operation of postcodes, to provide a new postal information input apparatus enabling fruitful and efficient input by providing more data to the person who inputs postcodes and a data display method thereof.

In order to achieve the above-described object, the

present invention basically adopts such a technical construction as described below.

The first aspect of the present invention is a postal information input apparatus in which when a postcode to be  
5 read by a reader of a postal matter sorting machine cannot be normally read, a correct postcode is reentered manually from an input device, wherein a first display means which displays on a display device of the input apparatus a first display so as to indicate that the postal information input  
10 apparatus receives a data to be input from the postal matter sorting machine, and also displays an unprocessed number in the postal information input apparatus, is provided.

In the second aspect of the present invention, a second display means for displaying on the display device a second  
15 display indicating that if the data to be input cannot be input within a predetermined time, the predetermined time has passed, is provided.

In the third aspect of the present invention, the second display is displayed within a display area of the first  
20 display.

In the fourth aspect of the present invention, the first display is an icon display on a display device of the postal information input device.

In the fifth aspect of the present invention, the second  
25 display is a display state in which the first display has changed from a first display state of the first display to a second display state thereof.

In the sixth aspect of the present invention, a display deletion means for deleting the first display and the second

display, when the data to be input corresponding to the first display is input within a predetermined time, is provided.

Referring to FIG. 1 and FIG. 2, an icon 11 which indicate that there is a received data is displayed on the display 6.

5 This icon indicates the number of data received from the current terminal (FIG. 2(a)), and at the same time, this icon can inform a key striker of occurrence of time out, by reversely displaying the displayed icon (in FIG. 2(b), data corresponding to the left figure in FIG. 2(b) becomes  
10 time-out).

Therefore, the operator can recognize the occurrence of time out, and hence can confirm whether the current key-striking speed is adequate or not. As a result, useless operation such as reinput of data or the like can be avoided.

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#### BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a flowchart of a postal information input apparatus according to the present invention.

FIG. 2(a) is a diagram showing the state of an icon  
20 displayed on the display, on which there are two received unprocessed data.

FIG. 2(b) is a diagram showing the state of an icon displayed on the display, on which the data corresponding to the left figure becomes time-out.

25 FIG. 2(c) is a diagram showing the state of an icon displayed on the display, on which the time-out data has been input and there remains only one unprocessed data.

FIG. 3 is a block diagram of a postal information input apparatus according to the present invention.

FIG. 4 is a block diagram of another specific embodiment.

FIG. 5 is a block diagram of the other specific embodiment.

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#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

Specific embodiments of the postal information input apparatus and the data display method according to the present invention will now be described in detail, with reference to the drawings.

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FIG. 1 is a flowchart showing the operation of the postal information input apparatus according to the present invention. FIG. 2 is a diagram showing the state of an icon displayed on the display, wherein FIG. 2(a) is a diagram showing a state that there are two received unprocessed data, FIG. 2(b) is a diagram showing a state that the data corresponding to the left figure becomes time-out, and FIG. 2(c) is a diagram showing a state that the time-out data has been input and the icon 12 corresponding to the input data is deleted and there remains only one unprocessed data. FIG. 3 is a block diagram of the postal information input apparatus. In these figures, there is shown a postal information input apparatus 10 in which when a postcode to be read by a reader of a postal matter sorting machine 9 cannot be normally read, a correct postcode is reentered manually from the postal information input device 1, wherein a first display means (Step A2) which displays on a display device 6 of the input apparatus 10 a first display 11 so as to indicate that the postal information input apparatus 10 receives a data

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to be input from the postal matter sorting machine 9, and also displays an unprocessed number in the postal information input apparatus 10, is provided.

Moreover, there is shown a postal information input apparatus characterized in that a second display means (Step A5) for displaying on the display device 6 a second display 12 indicating that if the data to be input cannot be input within a predetermined time, the predetermined time has passed, is provided.

10 In addition, there is shown a postal information input apparatus characterized in that the second display 12 is displayed within a display area of the first display 11.

There is also shown a postal information input apparatus characterized in that the first display 11 is an icon display on the display 6.  
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There is also shown a postal information input apparatus characterized in that the second display 12 is a display state in which the first display 11 has changed from a first display state of the first display (for example, a state in the left figure in FIG. 2(a)) to a second display state thereof (for example, a state in the left figure in FIG. 2(b)).  
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Furthermore, there is shown a postal information input apparatus characterized in that a display deletion means (Step A7) for deleting the first display 11 and the second display 12, when the data to be input corresponding to the first display 11 is input within a predetermined time, is provided.  
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The present invention will now be described in detail.

Referring to FIG. 3, the present specific embodiment comprises: an input device 1 such as a keyboard or the like; a communication device 2 for performing communication with a postal matter sorting machine 9; a receiver 3 for receiving  
 5 data such as postcode or the like; a data processing device 4 operating by program control; a memory 5 for storing data; and an output device 6 such as a display or the like. A data storing section 51 stores a plurality of data received from the receiver 3, and a key stroke information storing section  
 10 52 holds a character string input by the input device 1.

The data processing device 4 comprises reception notification means 41, time-out judgment means 42, and key stroke completion judgment means 43. When the receiver 3 receives one data, the reception notification means 41  
 15 outputs one icon 11 corresponding to the received data to the output device 6. Therefore, FIG. 2 shows that two data to be input have arrived. The time-out judgment section 42 judges whether the stored data in the data storing section 51 has run out of time or not, based on the time-out information  
 20 received from the postal matter sorting machine 9 via the communication device 2 and the data received from the receiver 3 and held in the data storing section 51, and outputs the information to the output device 6. In the case of time out, as shown by the icon in the left figure of FIG. 2(b), time-out  
 25 situation is displayed by reversely displaying the icon (in the case of FIG. 2, the colors of the character portion and the background portion of the icon are reversed to be displayed).

The key stroke completion judgment means 43 is

monitoring whether input data stored in the key stroke storing section 52 is input. When the key stroke completion judgment means 43 detects that the key stroke is finished, the key stroke completion judgment means 43 deletes the  
 5 corresponding icon displayed on the output device 6. In FIG. 2(c), the icon in the left figure is deleted, thereby indicate that the input of time-out data has been completed.

The operation of the present invention will now be described with reference to FIG. 1.

10 At first, it is confirmed if the data to be input from the postal matter sorting machine 9 has been received or not (step A1). At this time, if the data has been received, the icon 11 indicating the reception of data is displayed (step A2).

15 Next, it is confirmed if time out has occurred or not with respect to the already received data (step A3). If time-out notification has been received, this time-out notification is collated with the already received data (step A4), and if the time-out notification is the notification to  
 20 the already received data, the corresponding icon is reversed and displayed (step A5). Then, the key stroke is confirmed (step A6), and if key stroke has been completed, the icon corresponding to the data which key stroke has been completed is deleted, and processing of the data reception is again  
 25 carried out (step A1). In this manner, processing is repeatedly executed.

FIG. 4 and FIG. 5 are other embodiments of the present invention.

In the apparatus having the time-out judgment means 42A



in FIG. 4, after time-out judgment has been performed as described above, the background color of the icon is changed, thereby display time out of the data to be input.

Moreover, In the apparatus having the time-out judgment means 42B in FIG. 5, after time-out judgment has been performed as described above, character information that indicates time out is output to the output device 6, thereby display time-out of the data to be input.

Alternatively, time out may be displayed by flickering the icon.

As described above, the data display method of the present invention is a data display method of a postal information input apparatus 10 in which when a postcode to be read by a reader of a postal matter sorting machine 9 cannot be normally read, a correct postcode is reentered manually from the postal information input device 1, wherein the method comprising the steps of: receiving a data to be input from the postal matter sorting machine 9 (step A1), displaying on a display device 6 of the postal information input apparatus 10 a first display 11 indicating that the postal information input apparatus 10 receives a data to be input from the postal matter sorting machine 9, upon reception of the data in the step (step A2), displaying on the display device 6 a second display 12 indicating that if the data to be input cannot be input within a predetermined time, the predetermined time has passed (step A5), and deleting the first display 11 and the second display 12 displayed corresponding to the data to be input, when the data to be input being input within the predetermined time (step A7).

In the above description, it is constructed such that the icon is displayed on the display 6, but it may be displayed using a lamp or the like.

The present invention is constituted as described  
5 above, the first effect is that an operator can recognize the processing speed required for the on-line processing.

The second effect of the present invention is that the operator can strike keys corresponding to the situation, since the operator can know the reception condition.